

Patent Claims

1. An analog-electronic tripping device for an electrical power breaker responding to a short circuit having

- a current transformer (6, 7, 8) for detecting a current flowing in a circuit monitored by the power breaker,
- a tripping magnet (5) for releasing switching contacts (1, 2, 3) of the power breaker,
- a measuring and control circuit (13) for activating the tripping magnet (5) when the detected current exceeds a limit value,
- a power supply circuit for operating the tripping device and the tripping magnet (5),

characterized in that

- the current transformer (6, 7, 8) is in the form of a power-supplying current transformer,
- connected downstream of the current transformer (6, 7, 8) is a rectifier circuit (9, 10, 11) for the purpose of converting the detected current into a direct current,
- the current transformer (6, 7, 8) and the rectifier circuit (9, 10, 11) form the power supply circuit, and
- connected in parallel with the tripping magnet (5) is a controllable power semiconductor (12) which can be controlled by the measuring and control circuit (13) such that it is turned fully on when the limit value is undershot and is turned fully off when the limit value is exceeded.

2. The tripping device as claimed in claim 1, characterized in that

the power semiconductor (12) is connected to a feedback branch (20, 21, 22) for the purpose of maintaining its fully on state.

3. The tripping device as claimed in claim 1 or 2, characterized in that a capacitor (16) which can be charged by turning the power semiconductor (12) off for a short period of time is provided for the purpose of providing a control current required for maintaining an on state of the power semiconductor (12).

4. The tripping device as claimed in one of the preceding claims, characterized in that the tripping magnet (5) is a separate tripping magnet which is only connected to the tripping device responding to a short circuit.